

REMARKS

This is in response to the Office Action mailed on September 21, 2005, in which claims 1-20 were rejected. Claims 1 through 20 include three independent claims: Claims 1, 10 and 16. Claims 1-13 were rejected under 35 U.S.C. § 103(b) as being unpatentable over U.S. Patent No. 5,913,355 by Muramatsu (“Muramatsu”) in view of U.S. Patent No. 4, 027,726 by Hodler (“Hodler”). Claims 14-20 were rejected under 35 U.S.C. § 103(b) as unpatentable over Muramatsu in view of Hodler in further view of U.S. Patent No. 5,012,568 by DiSimone (“DiSimone”). The combination of the above references fails to teach every element of the presently invention as claimed in the independent claims. Therefore, Claims 1-20 are allowable, and notice to that effect is requested.

Specifically, in rejecting claim 1-13, the Office Action states that Muramatsu teaches a mold-block comprising a “pair of first-side channels (2)” that are “adapted to selectively function as conduits for cooling fluid.” The Office Action combines Muramatsu with Hodler to obtain a mold block having “mounting means to aid in mounting the block....” This argument is imported into the rejection of Claims 14 through 20 and further combines is with DiSimone. Thus, the assertions based on prior art teachings having a pair of channels adapted to selectively function as conduits for cooling fluid apply to each of the independent claims. With respect to Claims 14 through 20, the Office Action further states that DiSimone teaches the use of a “key/slot arrangement for facilitating installation and removal of a central mold portion.”

1. Muramatsu and Hodler

A. Claim 1

Claim 1 claims “a pair of first-side channels ... adapted to selectively function as conduits for cooling fluid and as mounting bores....” Claim 1 also requires that inner surfaces of a first-side block and a second-side block have inner surfaces that engage with each other to “define a gas passageway.” The Office Action states that element (2) of Muramatsu teaches “a pair of first-side channels (2) extending through the first-side block parallel to the first-side inner surface, and adapted to selectively function as conduits for cooling fluid and a second block having a second-side inner surface adapted to engage with the first-side inner surface to define a gas passageway (2).”

Element (2) of Muramatsu is a “gas exhaust passage 2” which functions so that “gas remaining in the cavity 1 can be discharged.” (Col. 1, lines 24 – 28.) As shown in FIGS. 1 and 4, passage 2 is comprised of two halves of a “chill vent 3” block. (Col. 1, line 25.) Passage 2 is, therefore, analogous to the element in Claim 1 describing a “gas passageway” formed by the mating of the second-side inner surface and the first-side inner surface. (See Claim 1.) As the Office Action admits, the block of Muramatsu does not disclose any mounting bores. Muramatsu does not teach *any* bores, channels or passageways beyond “passage 2” in the chill vent block. Therefore, passage 2 cannot be both the “gas passageway” and the “pair of first-side channels” of Claim 1.

Even when combined with Hodler, the Muramatsu fails to describe “a pair of channels” on the first block and “a pair of channels” on the second block *that selectively function as conduits for cooling fluid or mounting bores*. Hodler teaches the use of “screw fasteners 16 which are guided by means of spring washers 17 in slotted holes 15b.” (Col. 1, lines 14-20.) Thus, when combined with Hodler, Muramatsu teaches a mold block having pairs of slotted holes that function as mounting bores, but not as cooling conduits. If the slotted holes of Hodler were used, selectively or not, as cooling conduits, there is no additional means provided for securing the mold block with the mold.

In the present invention, the pairs of channels can function as cooling channels when other means provided with the mold block are used to secure the block with the mold. “However, if stationary-side block 32 is not mounted via channels 46, channels 46 may be used as coolant channels.” (Application Page 16, lines 23 – 25.) Other means are available for securing the block with the mold.

Bores 44 allow stationary-side block 32 to be directly mounted to mold half 18 at pocket 28 via mounting bores 41. Fasteners are inserted through outer surface 31 of mold half 18, through mounting bores 41, and into stationary-side block 32 at bores 44. This securely mounts stationary-side block 32 to mold half 18, while....

(Application Page 12, lines 10-11.) Mounting bores 41 and bores 44 are bores running perpendicular to the inner-side surface of the mold block, i.e. perpendicular to the cooling/mounting channels. (See FIGS. 2a – 5.)

Hodler does not teach the use of perpendicular bores or any other alternative method for joining the mold block to the mold if the slotted holes are to be used as cooling channels. It would, therefore, be impossible to use the slotted holes of Hodler as cooling channels.

Furthermore, the present invention includes cross channels 48 and 60 (shown in FIGS. 11 and 12), which assist “in the flow patterns of the coolant fluids.” (Application Page 16, lines 6-11.) The slotted holes of Hodler do not include any additional channels that allow cooling fluid to pass through them. The slotted holes of Hodler dead-end, and any cooling fluid directed into them would not circulate. The holes would therefore be ineffective in selectively functioning as cooling conduits, and it is not obvious how to adapt them to do so without the benefit of the present invention.

The combination of Muramatsu and Hodler fails to teach holes that can selectively be used as mounting bores or cooling channels, and therefore fails to teach every element of Claim 1. Thus, the rejection of Claim 1 should be withdrawn, and the rejections to Claims 2 – 9 should also be withdrawn because they depend from Claim 1.

B. Claim 10

Claim 10 requires “a first stationary-side channel” and “a second stationary-side channel” wherein the stationary-side channels are “adapted to selectively function as conduits for cooling fluid and as mounting bores....” In addition, Claim 10 claims “a first ejector-side channel” and “a second ejector-side channel” wherein the ejector-side channels are “adapted to selectively function as conduits for cooling fluid and as mounting bores....” Claim 10 also requires that facing heat exchange surfaces “engage ... to define a gas passageway.” (See Claim 10.)

As discussed above for Claim 1, Claim 10 is not taught or suggested by Muramatsu and Hodler. The combination of Muramatsu and Hodler does not teach channels that can selectively function as conduits for cooling fluid and mounting bores. First, passage 2 of Muramatsu cannot be both the gas passageway and the cooling or mounting channels of the present invention, as discussed

above. Second, although Hodler teaches the use of slotted holes, these holes cannot selectively be used as cooling conduits since that would then leave the mold block without means for mounting to the mold. The slotted holes also do not include a cross-channel for allowing circulation of the cooling fluid. Therefore, without the benefit of the present invention, it is not obvious how to adapt the slotted holes of Hodler to be cooling channels. Thus, the combination of Muramatsu and Hodler fails to teach holes that can selectively be used as mounting bores or cooling channels, and therefore fails to teach every element of Claim 10. The rejection of Claim 10 should be withdrawn, and the rejections to claim 11 – 13 should also be withdrawn because they depend from Claim 10.

2. Muramatsu, Hodler and DiSimone

A. Claim 10

The Office Action also rejects claims 14 and 15, which depend from Claim 10, by the further combination of DiSimone. DiSimone teaches a key/slot arrangement for installing or replacing a stack mold in an injection molding machine. (Claim 1; Col. 5, lines 15-22.) A mold is installed into an injection molding machine by lowering the mold into the machine such that it “engages the key members and/or cam rollers on the inside surface” of the frame of the molding machine. (Col. 3, lines 45-50.) The “slots and key members and/or cam rollers insure proper vertical and horizontal alignment of the stack mold relative to the center line of the machine.” (Col. 5, lines 51-54.)

DiSimone does not disclose a key/slot mechanism for installing a mold-block for cooling or venting purposes within a mold, as is claimed in the present invention. Regardless of that, DiSimone fails to disclose anything pertaining to mounting bores or cooling channels for a mold block or otherwise. Thus, even when combined with DiSimone, Muramatsu and Hodler fail to teach every element of independent Claim 10, and therefore fail to teach every element of dependent Claims 14 and 15. The rejections to Claims 14 and 15 should be withdrawn.

B. Claim 16

Claims 16 – 20 are rejected by the combination of Muramatsu, Hodler and DiSimone. Claim 16 claims “a pair of stationary-side coolant fluid channels” and “a pair of

ejector-side coolant fluid channels.” The Office Action states that element (2) of Muramatsu teaches “a pair of first-side channels (2) extending through the first-side block parallel to the first-side inner surface, and adapted to selectively function as conduits for cooling fluid and a second block having a second-side inner surface adapted to engage with the first-side inner surface to define a gas passageway (2).” Hodler teaches the use of “screw fasteners 16 which are guided by means of spring washers 17 in slotted holes 15b” to secure the mold block with the mold. (Col. 1, lines 14-20.) DiSimone teaches a key/slot arrangement for installing or replacing a stack mold in an injection molding machine. (Claim 1; Col. 5, lines 15-22.)

As discussed above, when combined with Hodler, Muramatsu teaches a mold block having pairs of slotted holes that function as mounting bores, but not as cooling conduits. Thus, the combination of Muramatsu and Hodler fails to teach holes that can selectively be used as cooling conduits, and therefore fails to teach every element of Claim 16. DiSimone fails to disclose anything pertaining to mounting bores or cooling conduits for a mold block or otherwise. Thus, the combination of Muramatsu, Hodler and DiSimone fails to teach every element of Claim 16, and the rejection of Claim 16 should be withdrawn. The rejections to claims 17 – 20 should also be withdrawn as they depend from Claim 16.

CONCLUSION

Muramatsu, Hodler and DiSimone fail to teach every element of independent Claims 1, 10 and 16. Thus, the rejections to those claims should be withdrawn. Claims 2-9 depend from Claim 1, Claims 11-15 depend from Claim 10 and Claims 17-20 depend from claim 16. Thus, all dependent claims depend from allowable independent claims, and the rejections of these claims should be withdrawn. A notice of allowance is respectfully requested.

Respectfully submitted,

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